

CLAIMS

1. Apparatus for cleaning fluids such as oils, said apparatus comprising an inlet for fluid to be cleaned, a heating unit for heating said fluid, a centrifugal cleaner, a vacuum dehydration unit, a holding tank, a fluid outlet, and means for conveying fluid from said inlet selectively through said heating unit, said centrifugal cleaner, and/or said vacuum dehydration unit and to said outlet or said holding tank.
2. Apparatus as claimed in claim 1 wherein said means for conveying fluid comprises a first pump and first connecting means for selectively connecting said first pump to said inlet or said holding tank.
3. Apparatus as claimed in claim 2 wherein said connecting means includes selectively actuatable valve means.
4. Apparatus as claimed in any one of claims 1 to 3 and including means connecting said heating unit to said first pump and to said centrifugal cleaner whereby fluid pumped by said pump passes through said heating unit to said centrifugal cleaner.
5. Apparatus as claimed in any one of claims 1 to 4 wherein said centrifugal cleaner comprises a base, a rotor mounted on a substantially vertical axis for rotation thereabout, at least one rotor nozzle in a lower portion of the rotor, and a housing mounted on the base and enclosing the rotor.

6. Apparatus as claimed in claim 5 wherein said centrifugal cleaner includes an impeller positioned below the rotor adjacent the base to exert pressure on the fluid in said cleaner.
7. Apparatus as claimed in claim 6 wherein said impeller comprise a central hub mounted for rotation on the central axis around which said rotor is rotatable, said hub having at least one blade extending therefrom.
8. Apparatus as claimed in claim 7 wherein said impeller is attached to said rotor for rotation therewith.
9. Apparatus as claimed in claim 7 wherein said impeller is independent of said rotor.
10. Apparatus as claimed in any one of claims 1 to 4 wherein said centrifugal cleaner comprises a base, a rotor having an interior and an exterior mounted on a substantially vertical axis for revolution thereabout, at least one rotor nozzle in a lower portion of the rotor, the rotor having side walls arranged to retain solid contaminants contained in the fluid which are forced outwardly by rapid rotation of the rotor due to reaction to ejection of the fluid to a drain sump through the rotor nozzles, a housing mounted on the base and enclosing the rotor, a drain sump formed in the base below the rotor, a fluid inlet passage arranged to supply fluid at an elevated pressure to the interior of the rotor by way of the rotation axis, at least one fluid drain passage in the base to receive fluid from the drain sump and an impeller positioned below the rotor adjacent the base to exert pressure on the fluid.
11. Apparatus as claims in any one of claims 1 to 10 wherein said vacuum dehydration unit comprises a vacuum chamber having a base, an inlet in an upper portion of the vacuum chamber for fluid entry, and means for generating a vacuum in said vacuum chamber.

12. Apparatus as claimed in claim 11 and including a fluid discharge passage in a lower portion of the vacuum chamber and extending a distance above the base of the chamber to maintain a depth of fluid in said vacuum chamber.
13. Apparatus as claimed in claim 1 wherein said vacuum dehydration unit includes a vacuum chamber and wherein fluid from said centrifugal cleaner is supplied directly to said chamber.
14. Apparatus as claimed in claim 11 wherein said centrifugal cleaner includes an outlet, said outlet extending into said vacuum chamber.
15. Apparatus as claimed in any one of claims 11 to 14 wherein said vacuum chamber includes at least one tray or other means to increase the surface area of oil exposed to the vacuum.
16. Apparatus as claimed in any one of claims 1 to 15 wherein said means for conveying fluid includes a second pump and second connecting means for selectively connecting said second pump to said holding tank or said outlet.
17. Apparatus as claimed in claim 16 wherein said second connecting means includes selectively actuatable valve means
18. Apparatus as claimed in any one of the preceding claims and including a mobile chassis and wherein said heating unit, centrifugal cleaner, vacuum dehydration unit, and holding tank are supported on said chassis.
19. A method for cleaning a fluid such as an oil, said method including the steps of heating said fluid, centrifuging said heated fluid, dehydrating said centrifuged fluid and selectively passing said dehydrated fluid to an outlet or subjecting said dehydrated fluid to further heating, centrifuging and dehydration through said steps.